

WHAT IS EMBODIMENTED IS:

1. A sound synthesis device used for an interactive device which is capable of interacting with a user, said interactive device comprising a pseudo-emotion generator which is programmed to generate plural pseudo emotions based on signals received by the interaction device, said sound synthesis device comprising:

a sound data memory which stores a different sound assigned to each pseudo emotion;

a sound signal generator which receives signals from the pseudo-emotion generator and accordingly generates a sound signal for each pseudo emotion by retrieving the sound data stored in the sound data memory;

a sound synthesizer which is programmed to synthesize a sound by combining each sound signal from the sound signal generator, wherein the user can recognize overall emotions generated in the interaction device; and

an output device which outputs a synthesized sound to the user.

2. The sound synthesis device according to Claim 1, wherein the memory stores multiple sets of sound data, each set defining sounds corresponding to pseudo emotions, and the sound signal generator further comprises a selection device which selects a set of sound data to be used based on a designated selection signal.

3. The sound synthesis device according to Claim 2, wherein the designated selection signal is a signal indicating the passage of time.

4. The sound synthesis device according to Claim 2, wherein the designated selection signal is a signal indicating the history of interaction between the user and the interactive device.

5. An interactive device capable of interacting with a user, comprising:
a pseudo-emotion generator which is programmed to generate plural pseudo emotions based on signals received by the interaction device; and
a sound synthesis device comprising:

(i) a sound data memory which stores a different sound assigned to each pseudo emotion;

(ii) a sound signal generator which receives signals from the pseudo-emotion generator and accordingly generates a sound signal for each pseudo emotion by retrieving the sound data stored in the sound data memory;

(iii) a sound synthesizer which is programmed to synthesize a sound by combining each sound signal from the sound signal generator, wherein the user can recognize overall emotions generated in the interaction device; and

(iv) an output device which outputs a synthesized sound to the user.

6. The interactive device according to Claim 5, wherein the memory stores multiple sets of sound data, each set defining sounds corresponding to pseudo emotions, and the sound signal generator further comprises a selection device which selects a set of sound data to be used based on a designated selection signal.

7. The interactive device according to Claim 6, further comprising a growth stage selection unit programmed to select an artificial growth stage based on the passage of time wherein the designated selection signal is a signal indicating the growth stage outputted from the growth stage calculating unit.

8. The interactive device according to Claim 6, further comprising a personality selection unit programmed to select a personality based on the history of interaction between the user and the interactive device wherein the designated selection signal is a signal indicating the personality.

9. A method for synthesizing sounds for an interactive device which is capable of interacting with a user, said interactive device comprising a pseudo-emotion generator which is programmed to generate plural pseudo emotions based on signals received by the interaction device, said method comprising:

storing in a sound data memory a different sound assigned to each pseudo emotion;

generating a sound signal for each pseudo emotion generated in the pseudo-emotion generator by retrieving the sound data stored in the sound data memory;

5 synthesizing a sound by combining each sound signal generated for each pseudo emotion, wherein the user can recognize overall emotions generated in the pseudo-emotion generator; and

outputting a synthesized sound to the user.

10 10. The method according to Claim 9, wherein the memory stores multiple sets of sound data, each set defining sounds corresponding to pseudo emotions, and a set of sound data to be used is selected based on a designated selection signal.

11. The method according to Claim 10, wherein the designated selection signal is a signal indicating the passage of time.

15 12. The method according to Claim 10, wherein the designated selection signal is a signal indicating the history of interaction between the user and the interactive device.

20 13. A sound synthesizing method applied to a pseudo-emotion expression device which utilizes a pseudo-emotion generator for generating a plurality of different pseudo-emotions to express said plurality of pseudo-emotions through sounds, said method characterized in that

when a sound data memory is provided in which sound data is stored for each of said pseudo-emotions, sound data corresponding to each pseudo-emotion generated by said pseudo-emotion generator is read from said sound data memory and synthesized.

25 14. A sound synthesis device applied to a pseudo-emotion expression device which utilizes a pseudo-emotion generator for generating a plurality of different pseudo-emotions to express said plurality of pseudo-emotions through sounds, said device comprising:

30 a sound data memory for storing sound data for each of said pseudo-emotions; and a sound data synthesizer for reading from said sound data

memory and synthesizing sound data corresponding to each pseudo-emotion generated by said pseudo-emotion generator.

15. A pseudo-emotion expression device for expressing a plurality of pseudo-emotions through sounds, comprising a sound data memory for storing sound data for each of said pseudo-emotions; a pseudo-emotion generator for generating said plurality of pseudo-emotions; a sound data synthesizer for reading from said sound data memory and synthesizing sound data corresponding to each pseudo-emotion generated by said pseudo-emotion generator; and a sound output device for outputting a sound based on sound data synthesized by said sound data synthesizer.

16. The pseudo-emotion expression device according Claim 15, further comprising a stimulus recognition device for recognizing stimuli given from the outside, wherein the pseudo-emotion generator generates said plurality of pseudo-emotions based on the recognition result of said stimulus recognition device.

17. The pseudo-emotion expression device according to Claim 15 further comprising a character forming device for forming any of a plurality of different characters, wherein said sound data memory is capable of storing, for each of said characters, a sound data correspondence table in which said sound data is registered corresponding to each of said pseudo-emotions; and said sound data synthesizer is adapted to read from said sound memory and synthesize sound data corresponding to each pseudo-emotion generated by said pseudo-emotion generator, by referring to a sound data correspondence table corresponding to a character formed by said character forming device.

18. The pseudo-emotion expression device according to claim 15 further comprising a growing stage specifying device for specifying growing stages, wherein said sound data memory is capable of storing, for each of said growing stages, a sound data correspondence table in which said sound data is registered corresponding to each of said pseudo-emotions; and said sound data synthesizer is adapted to read from said sound memory and synthesize sound data corresponding to each pseudo-emotion generated by said pseudo-emotion generator, by referring to a sound data correspondence table corresponding to a growing stage specified by said growing stage specifying device.

19. The pseudo-emotion expression device according to Claim 15, wherein said sound data memory is capable of storing a plurality of sound data correspondence tables in which said sound data is registered corresponding to each of said pseudo-emotions; a table selection device is provided for selecting any of said plurality of sound data correspondence tables; and said sound data synthesizer is adapted to read from said sound memory and synthesize sound data corresponding to each pseudo-emotion generated by said pseudo-emotion generator, by referring to a sound data correspondence table selected by said table selection device.

20. The pseudo-emotion expression device according to Claim 15, wherein said pseudo-emotion generator is adapted to generate the intensity of each of said pseudo-emotions; and said sound data synthesizer is adapted to produce an acoustic effect equivalent to the intensity of the pseudo-emotion generated by said pseudo-emotion generator and synthesize said sound data.